

REMARKS/ARGUMENTS

The Pending Claims

Claims 1, 6, 8, and 15-24 are pending. Claims 1, 6, and 8 are currently being examined and are directed to a magnetic carrier for a biological substance, such as a nucleic acid. Claims 15-24 are currently withdrawn.

Amendment to the Specification

The specification has been amended to correct a typographical error with respect to the term “synonymous” in the paragraph on page 16, line 21, through page 17, line 7. No new matter has been added by way of this amendment.

Summary of the Office Action

Claims 1, 6, and 8 are rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Takiguchi et al. (U.S. Patent 5,137,796). Reconsideration of this rejection is hereby requested.

Discussion of the Anticipation Rejection

Takiguchi et al. allegedly discloses magnetic particles with a saturation magnetization of 60-90 emu/g and a coercive force of 40-80 Oe, which falls within the claimed ranges. The particles reportedly are iron oxide coated with silica and are 5 μm or less in size.

Regarding the claim limitation that the magnetic particle can bind a nucleic acid, it is the Office’s position that the particle of Takiguchi et al. inherently is capable of binding a nucleic acid because the particle comprises the same materials and physical properties as the claimed magnetic particle (Office Action, page 3, first paragraph).

The magnetic carrier of the present invention has a ferromagnetic iron oxide particle surface that is coated with silica. As described in the specification: “As used herein, by ‘coated’ is meant that, a silica layer is formed on the outermost layer of the magnetic carrier, covering the outside of the ferromagnetic iron oxide particle, and is synonymous with adhesion of silica to the vicinity of the surface of the ferromagnetic iron oxide particle. The silica layer may be formed to completely cover the ferromagnetic iron oxide particle.” (page

16, lines 24-30). The silica coating is superior in its ability to bind biological substances. Thus, the magnetic carrier of the present invention enables the collection of particles to which biological substances are bonded by utilizing the magnetic power in the carrier.

In contrast, Takiguchi et al. relates to a magnetic developer obtained by mixing a toner, containing a binder resin and magnetic particles, with a silica fine powder. Takiguchi et al. discloses that, "when the magnetic toner of the present invention is combined with the silica fine powder, the silica fine powder is disposed between the toner particles and the [developing] sleeve surface, whereby the abrasion of the toner particle is remarkably reduced" (col. 20, lines 39-43). Takiguchi et al. further states: "The magnetic toner for developing electrostatic images according to the present invention may be produced by sufficiently mixing magnetic powder with ... resin ... then melting and kneading the mixture ... cooling and crushing the mixture; and subjecting the powder product to precise classification to form the insulating magnetic toner according to the present invention. Further, the magnetic developer according to the present invention may be obtained by mixing a predetermined amount of hydrophobic silica fine powder with the insulating magnetic toner" (col. 25, line 52, through col. 26, line 2).

Therefore, it is evident that Takiguchi et al. merely discloses a mixed powder of a magnetic toner and a silica fine powder. The silica powder in the magnetic developer of Takiguchi et al. does not adhere to the vicinity of the surface of the magnetic particle to form a coating. As such, Takiguchi et al. does not disclose a magnetic particle with a surface *coated with* silica, as required by the pending claims. Contrary to the Office's allegation (Office Action, page 3, first paragraph), since Takiguchi et al. does not disclose a silica coating on a ferromagnetic iron oxide particle, the resulting magnetic toner of Takiguchi et al. is incapable of binding a nucleic acid (item (iii) of claims 1, 6, and 8 (and withdrawn claims 15-24)).

In view of the deficiencies of Takiguchi et al., Takiguchi et al. does not anticipate the subject matter of claims 1, 6, and 8 (or withdrawn claims 15-24), and Applicants respectfully request the withdrawal of the anticipation rejection.

In addition, the present invention, as defined by the pending claims, is not obvious in view of Takiguchi et al. Since the magnetic particle of Takiguchi et al. is used for a

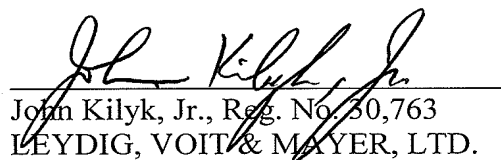
developer to be used in an electrophotographic image-forming method, Takiguchi et al. does not teach or suggest the isolation of a biological substance. As such, one of ordinary skill in the art would not have been motivated to modify the magnetic particle or magnetic toner of Takiguchi et al. in such a way so as to provide a silica coating that can bind a nucleic acid, as required by the pending claims. Therefore, the magnetic carrier of the present invention is not obvious based on the cited reference.

In view of the foregoing comments, it is clear that the present invention, as defined by claims 1, 6, and 8 (and withdrawn claims 15-24), is both novel and unobvious in view of Takiguchi et al.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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